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1: AIDS Res Hum Retroviruses. 1996 Mar  
1;12(4):259-72.

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**Candidate HIV type 1 multideterminant cluster peptide-P18MN vaccine constructs elicit type 1 helper T cells, cytotoxic T cells, and neutralizing antibody, all using the same adjuvant immunization.**

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Cytotoxic T lymphocytes and Th1 cells have been suggested to play a critical role in the control of HIV infection. It is therefore considered that a vaccine that induces a strong Th1 response and CTL response would be more efficacious than one that does not in providing protection against infection and progression toward AIDS. In this study we show that immunization with vaccine constructs consisting of multideterminant cluster peptides containing Th epitopes from the HIV-1IIIB envelope colinearly synthesized to peptide 18MN, is capable of inducing a Th1 response in mice and, dependent on this help, both cytotoxic T cell responses and neutralizing antibody toward the homologous strain of HIV. Moreover, the cytotoxic T cell response elicited by immunization with a mixture of cluster peptide-P18MN vaccine constructs was at least as cross-reactive against known viral variant P18 target sequences as a CTL line produced by immunization with a vaccinia construct expressing recombinant gp160 MN. Four adjuvants were compared to optimize both CTL and antibody responses. A single adjuvant formulation of peptide in ISA 51 could elicit all three: Th1 cells, CTLs, and neutralizing antibody. Thus, immunization directed toward the development of a cytotoxic T cell response does not preclude the development of neutralizing antibody and vice versa, i.e., the responses are not mutually exclusive. The immunization protocol described here should be directly applicable for study in clinical trials aimed at HIV-1 immunotherapy or prophylaxis.

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